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SUBJECT Estonian Shale Oil Deposits

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THIS IS UNEVALUATED INFORMATION

1. Shale oil deposits in Estonia are located between Sonda and Vaivara, a distance of about 50 km. I do not know the width of the deposit and have never heard that it has been positively ascertained. I do know that it varies from three km up. Using a very conservative estimate of three km, a figure of 150 million square meters would be determined (50 km X 1000 meters X 3 km X 1000 meters). From the attached sketch I have shown that on each square meter there are 1.875 metric tons of shale. From 150 million square meters, 20% should be deducted for areas not subject to removal, such as roads, building foundations, etc. This would leave for mining purposes an area of 120 million square meters. Loss during extraction is usually about 10%. This means a reduction from 1.875 metric tons per square meter to 1.6 metric tons. Accordingly, the shale oil reserve would be 1.6 X 120 million or 192 million metric tons.
2. I would estimate that up to 1940 from 25 to 30 million metric tons have been mined, arriving at this figure from a 260 thousand metric ton yearly average for each of seven operating mines for a period of 15 years. Judging from various articles I have read, I believe the Soviets have increased production. Assuming at most that since 1940, 60 million metric tons have been removed, there would still be a reserve of 90 to 100 million metric tons. Again I point out that my estimates are very conservative. The deposits undoubtedly cover a larger area than I have mentioned and, too, new areas have undoubtedly been opened up. For example, I have read that Ahtme is the site of a new mine.
3. Up to 1940 the following mines and refineries were located between Sonda and Vaivara:
 - Udja - an underground mine
 - Kivioli - an underground mine and refinery located near the railroad station
 - Küttejõu - open pit and underground mine
 - New Consolidated Goldfields, Ltd. - a UK mine and refinery located southwest from the Kohtla railroad station
 - Kohtla-Yarve - government owned mines and oil refineries to the north of the Kohtla railroad station
 - Kukruse - a branch of Kohtla-Yarve Government mine; an underground operation, located about seven km west of Johvi on the Narva-Tallinn highway

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Sillandö - open pit and underground mine and refinery at Viivikonna near the Vaivara railroad station; a Swedish owned mine

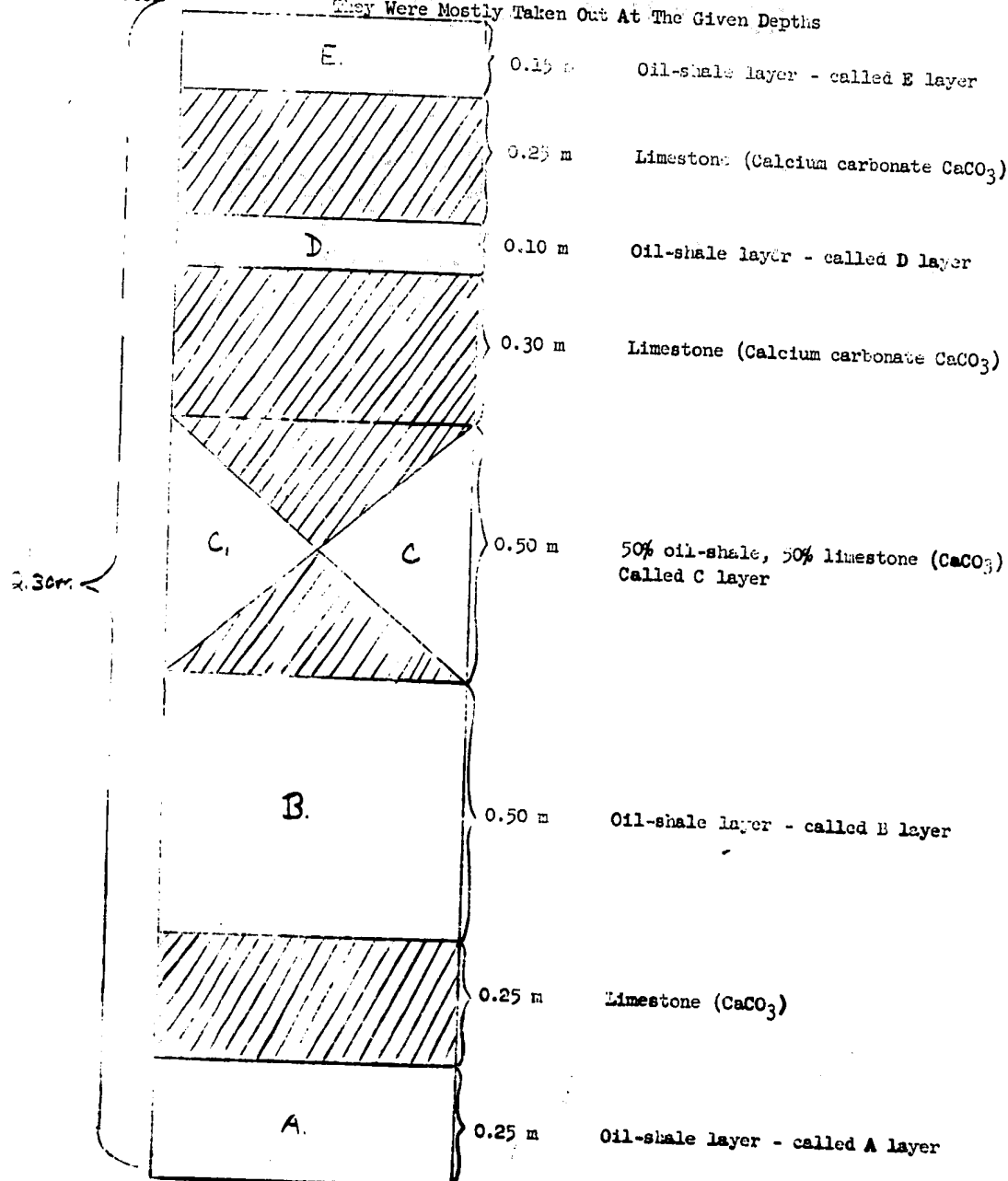
4. The shale between Sonda and Vaivara lies mostly at a depth of 20 meters. There are places where the covering is only two to five meters in depth, permitting open pit mining. The layer of shale drops about three meters per km to the south, the covering increasing proportionately.

SCALE 1:10

m - meter

THE CROSS SECTION OF AN OIL-SHALE LAYER

They Were Mostly Taken Out At The Given Depths



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Note to Sketen: There is another layer after layer E known as layer F, which contains 50% limestone and 50% oil-shale. This layer is about 1.00 meters thick. Some mines took it out; however, the majority did not, the reason being the problem of eliminating water. Then, too, in some areas the A layer was very easy to work. The F layer had to be mined at about 3.30 meters, which was a very expensive operation.

In the above instance 1.875 tons of oil-shale are figured per square meter.
(Specific weight of oil-shale is 1.5)

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